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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,555	01/23/2004	Charles A. Howland	W0490/7020US	7558

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EXAMINER

KOCH, GEORGE R

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/763,555

Applicant(s)

HOWLAND, CHARLES

Examiner

George R. Koch III

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 1-7,33 and 41-48 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27-30 is/are allowed.
- 6) ☒ Claim(s) 7-26,31,32 and 34-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/27/04; 10/28/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group II in the reply filed on 11/21/2005 is acknowledged.
2. Claim 33 is considered to be in group I. Note that it is not directed to bonding with adhesive, but and is also directed to control methods, similar to all of the claims in group I.
3. An action on claims 7-32, and 34-40 follows

Drawings

4. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawing quality is low. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.
5. Color photographs and color drawings are not accepted unless a petition filed under 37 CFR 1.84(a)(2) is granted. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the

Art Unit: 1734

following language as the first paragraph of the brief description of the drawings section of the specification:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings and black and white photographs have been satisfied. See 37 CFR 1.84(b)(2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 7-26, 31-32 and 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA - see paragraphs 0003-0006) in view of Bebbler (US 2002/0016118).

The AAPA discloses a method for joining at least two fabric layers, comprising the steps of: providing at least two fabric layers (paragraph 0005); saturating the facing surfaces with an adhesive (such as urethane, see paragraph 00045), and applying heat and pressure to the fabric layers (paragraph 0005). It is noted that no independent description of what constitutes optimal thickness or what this step actually means in claim 7. Therefore, the method in the AAPA is inherently bonded to a predetermined optimal thickness.

The AAPA does not disclose providing an adhesive film between the fabric layers. Bebber discloses providing an adhesive film between the fabric layers (paragraph 0060), and that this layer is bonded to the fabric layers. One in the art would appreciate that such films improve the fabric strength. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the adhesive film of Bebber in order to improve fabric strength.

As to claims 8-10, the AAPA discloses providing fabric layers that have a tenacity of 10g/denier or higher (see paragraph 0006).

As to claims 11 and 12, Bebber as incorporated in claim 7 above discloses that the fabric layers are woven yarns with a degree of crimp (see paragraph 0042). Bebber also discloses multiple ranges of twist (see paragraph 0034).

As to claim 13, the AAPA discloses providing two fabric layers and a tape fabric layer (such as urethane - see paragraph 0005).

As to claim 14, the AAPA discloses that the fabric layers are airship hull sections, and a tape layer such as urethane.

As to claim 15, the heat and pressure applied to the urethane in the AAPA results in the claimed encapsulation.

As to claim 16, the AAPA discloses using urethane.

As to claim 17, the AAPA discloses coating the with a continuous coat (i.e., an extruded film) between the fabric layers.

As to claims 18-19, official notice is taken that the claimed dimensions are well known and conventional. One in the art would appreciate that the claimed dimensions can be achieved by routine experimentation, and would do so in order to achieve an effective final product.

As to claim 20, the AAPA discloses that the resins are exposed at 330 degrees Fahrenheit for less than one minute (paragraph 00045). The AAPA discloses crosslinking, i.e., activating the bonding agent (paragraph 0006).

As to claim 21, the AAPA discloses that the thermoplastic resin is bonded to the film. Therefore, the film is brought to the melt point of the adhesive.

As to claim 22, the AAPA discloses heat bonding at 35 psi. Official notice is taken that lowering the temperature and raising the pressure of the bonding operation is well known and conventional. One in the art would appreciate that the claimed quantities can be achieved by routine experimentation, and would do so in order to achieve an effective final product.

As to claim 23, the AAPA discloses heating to 333 degrees Fahrenheit, which is near 350 degrees Fahrenheit.

As to claim 24, the AAPA discloses applying pressure (35 psi) to the fabric layers. This results in the adhesive being squeezed into the fabric layers.

As to claim 25, the AAPA discloses heat bonding at 35 psi. Official notice is taken that optionally lowering the temperature and raising the pressure of the bonding operation is well known and conventional. One in the art would appreciate that the claimed quantities can be achieved by routine experimentation, and would do so in order to achieve an effective final product.

As to claim 26, the AAPA discloses that the heat/pressure time is less than one minute.

Claim 31 is rejected on similar grounds as claims 7, 21, and 22 above.

Claim 32 is rejected over claims 21, 22 and 23 above.

Claim 34 is rejected on similar grounds as claim 7 above. The AAPA discloses a method for joining at least two fabric layers, comprising the steps of: providing at least two fabric layers (paragraph 0005); saturating the facing surfaces with an adhesive (such as urethane, see paragraph 00045), and applying heat and pressure to the fabric layers (paragraph 0005). It is noted that no independent description of what constitutes optimal density or what this step actually means in claim 34. Therefore, the method in the AAPA, is inherently bonded to a predetermined optimal thickness.

The AAPA does not disclose providing an adhesive film between the fabric layers. Bebbler discloses providing an adhesive film between the fabric layers (paragraph 0060), and that this layer is bonded to the fabric layers. One in the art would appreciate that such films improve the fabric strength. Therefore, it would have

Art Unit: 1734

been obvious to one of ordinary skill in the art at the time of the invention to have utilized the adhesive film of Bebbler in order to improve fabric strength.

As to claim 35, the AAPA discloses the claimed fiber strength (paragraphs 0005-0006).

As to claim 36, the AAPA discloses that the method is for bonding hull sections, and therefore would have fabric layers extending in opposite directions.

As to claim 37, the AAPA discloses that the fabric layers are airship hull sections, and a tape layer such as urethane (paragraph 0005-0006).

As to claim 38, the AAPA discloses that the resins are exposed at 330 degrees Fahrenheit for less than one minute (paragraph 00045). The AAPA discloses crosslinking, i.e., activating the bonding agent (paragraph 0006).

As to claim 39, the AAPA discloses heat bonding at 35 psi. Official notice is taken that lowering the temperature and raising the pressure of the bonding operation is well known and conventional. One in the art would appreciate that the claimed quantities can be achieved by routine experimentation, and would do so in order to achieve an effective final product.

As to claim 40, the AAPA discloses that the heat/pressure time is less than one minute.

Allowable Subject Matter

9. Claims 27-30 are allowed.

Art Unit: 1734

10. The following is an examiner's statement of reasons for allowance: The prior art of record does not suggest the additional step of monitoring the quality of said joint for voids in the adhesive, and adjusting at least one joint formation parameter whereby said voids in the adhesive between the joined fabric layers are eliminated and avoided, said joint formation parameters comprising a group including adhesive film thickness, fabric layer weave openness, adhesive heating temperature, pressure applied to the joint during formation, a time that the adhesive is maintained near its melting point, and a time that pressure is applied to the fabric layers.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George R. Koch III whose telephone number is (571) 272-1230 (TDD only). If the applicant cannot make a direct TDD-to-TDD call, the applicant can communicate by calling the Federal Relay Service at 1-866-377-8642 and giving the operator the above TDD number. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone

Art Unit: 1734

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George R. Koch III
Primary Examiner
Art Unit 1734

GRK
2/6/06